

FRANK EDGAR MULLER-KARGER
CURRICULUM VITAE

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University of South Florida
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I. Personal Information:

Ancestry: Hispanic
Employer: University of South Florida, College of Marine Science
140 7th Ave. South, St. Petersburg, FL 33701

II. Education:

Primary and High School:

1974 *Colegio "Humboldt", Caracas, Venezuela.*

Undergraduate:

1974 Universidad Simón Bolívar, Caracas, Venezuela. Chemical Engineering. (1976, transferred to Florida Institute of Technology).

1979 Bachelor in Biological Oceanography. Florida Institute of Technology. Melbourne, FL.

Graduate:

1984 Master of Science in Oceanography. Institute of Marine Science. University of Alaska, Fairbanks, AK. Thesis: Lower trophic level studies in the marginal sea-ice zone. Advisor: Dr. Vera Alexander.

1988 Ph.D. in Marine and Estuarine Sciences. University of Maryland, Center for Environmental and Estuarine Studies (UMCEES). College Park, MD and Horn Point Environmental Laboratories, Cambridge, MD. Dissertation: Variation in the seasonal distribution of phytoplankton in the Caribbean Sea as observed in a series of Coastal Zone Color Scanner images (1978-1986). Advisors: Thomas R. Fisher (U. Maryland), and Charles R. McClain (NASA, Goddard Space Flight Center).

2001 Master of Science in Management. University of South Florida. College of Business Administration. Tampa, FL. Organizational design, leadership, human resources and modern management principles and techniques.

III. Employment:

2000/- Full Professor. Tenured. University of South Florida

Employer: University of South Florida
140 7th Ave. S., St. Petersburg, FL 33701

2007/2009 Dean, School for Marine Science and Technology, Univ. Massachusetts Dartmouth

Full Professor. Tenured. Univ. Massachusetts Dartmouth

Employer: University of Massachusetts Dartmouth
706 South Rodney French Boulevard

New Bedford, MA 02744-1221

Supervisor: Dr. Anthony Garro, Provost

agarro@umassd.edu; (508) 999-8024

2003/05 College of Marine Science Dean's Advisory Council/Biological Oceanography

2001/04 Commissioner, U.S. Commission on Ocean Policy

Voluntary, serving as nominee of and by appointment of the President of the United States. USCOP Chair: Adm. (USN/Retired) James D. Watkins

1994/00 Associate Professor. Tenured 1994. University of South Florida

- 1992/94 Program Scientist, Ocean Biogeochemistry Program: National Aeronautics and Space Administration / NASA Headquarters / NASA Jet Propulsion Lab-California Institute of Technology.
 Program Scientist, NASA Sea-viewing Wide-Field-of-view Sensor (SeaWiFS) Program.
 Program Scientist, NASA Moderate Resolution Imaging Spectrometer Sensor (MODIS) Program.
Employer: CA Institute of Technology, NASA JPL and NASA HQ
Supervisors:
Dr. Diane Wickland
Diane.Wickland@hq.nasa.gov; (202) 358-0245
Dr. Robert Murphy
- 1989/94 Assistant Professor, Department of Marine Science, USF
- 1988/89 Research Associate, Department of Marine Science, USF
Supervisor: Dr. John J. Walsh
jwalsh@marine.usf.edu; (727) 553-1164
- 1985/87 Consultant to Skidaway Institute of Oceanography.
- 1985/87 Consultant to NASA Goddard Space Flight Center.
- 1984/88 Research Assistant, CEES Program, University of Maryland.
- 1984/87 Teaching Assistant, Dept. of Botany, University of Maryland.
- 1979/84 Research Assistant, Institute of Marine Science, U. of Alaska.

IV. Professional Interests and Expertise:

Interdisciplinary Earth science and Earth observation,
 Oceanography, coastal and estuarine science,
 Satellite oceanography and remote sensing,
 Science education and strategic planning for formal/informal public education,
 Integration of science, management and education,
 Ocean Policy

V. Professional Awards, Honors, and Scholarships:

- 2019 Best Paper Award for Interdisciplinary Applications. Lead Author: Dr. Chuanmin Hu.
 "Remote sensing estimation of surface oil volume during the 2010 Deepwater Horizon oil blowout in the Gulf of Mexico: scaling up AVIRIS observations with MODIS measurements". Journal of Applied Remote Sensing (JARS).
- 2019 AAAS Fellow; Council of the American Association for the Advancement of Science
- 2019 University of South Florida: Outstanding Faculty Award
- 2018/- Intergovernmental Oceanographic Commission, Ocean Best Practices System Steering Committee
- 2017/- Intergovernmental Oceanographic Commission, Global Ocean Observing System (GOOS) Bio-Eco Panel, member
- 2017/- Integrated Marine Biosphere Research (IMBeR/SCOR) Scientific Steering Committee
- 2017/- OceanObs'19 (Decadal Conference) Program Committee
- 2016 National Oceanographic Partnership Program 2016 Excellence in Partnering Award for leading the *National Marine Sanctuaries as Sentinel Sites for a Demonstration Marine Biodiversity Observation Network (MBON)*
- 2015 University of South Florida: Faculty Outstanding Research Achievement Award
- 2014 Group Achievement award: CARIACO Ocean Time Series Project selected as highlight for the Roger Revelle Memorial Lecture (Executive Council of the Intergovernmental Oceanographic Commission of UNESCO; 1 July 2014)
- 2013 Group Achievement Honor Award, NASA Ames Research Center
- 2013 Secondary Business Partner of the Year, Hillsborough County Public Schools
- 2013 Feature article USF Magazine/Spring 2013: Turning the Tide; A. Carney and K. Henning
- 2011 Gulf Guardian Award, EPA Gulf of Mexico Program.
- 2011/12 NASA Pre-Aerosol/Clouds/Ecosystem (PACE) Science Definition Team

2011 Feature article in The Scientist ("Mapping Coral Reefs"; February 2012; p. 51)
2010/ Silhouettes, La Gaceta (Tampa, FL; September 13, 2010); featured community figure.
2009/- Director, International Ocean Institute – USA (IOI-USA)
2008/- Chair (2011), Science Advisory Council, InterAmerican Institute for Climate Change Research (IAI)
2008/2009 Member, Science Advisory Council to the Massachusetts Ocean Planning Commission
2008/2010 Board Trustee, The Ocean Explorium, New Bedford, Massachusetts
2008/- Board Trustee, The Northstar Learning Center, New Bedford, Massachusetts
2008/2010 Member, NRC committee "Committee on the Review of NOAA's Education Programs"
2008 "Most cited paper" mention, Continental Shelf Research, for 2005 Astor et al. paper
2006 USF Million Dollar Researcher President's award
2006/2007 Member, University of South Florida, President's Strategic Planning Committee
2006/2007 Member, NRC committee "Extending Observations and Research Results to Practical Applications: A Review of NASA's Approach"
2006 Member, NRC committee "An Assessment of Balance in NASA's Science Programs"
2005 Julius A. Stratton Award for Leadership, awarded to members of the U.S. Commission on Ocean Policy (Coastal Zone 2005 meeting)
2005/- Editorial Board, Caribbean Marine Science, Journal of the Institute for Marine Affairs (IMA), Trinidad and Tobago
2005/2008 Member, National Research Council Ocean Studies Board, National Academies
2005/2008 U.S. Representative to the ICSU SCOR, appointed by the NRC
2005/2008 Member and elected vice-chair, University of South Florida Research Council
2004/- Editorial Board, Memoria, Journal, Fundación La Salle de Ciencias Naturales de Venezuela
2004 Acknowledgement for service on the U.S. Commission on Ocean Policy by Senator E. Hollings. Congressional Record. Proceedings and Debates of the 108th Congress, Second Session. Vol 150. No. 89.
2004 Admiral James D. Watkins Award for Contributions to Ocean Research and Education, Consortium for Oceanographic Research and Education (CORE)
2004 Gulf Guardian Award (EPA Gulf of Mexico Program)
2003 University of South Florida President's Award for Faculty Excellence
2003/2005 USF College of Marine Science Dean's Advisory Council / faculty elected representative
2001/2004 Commissioner, U.S. Commission on Ocean Policy, nominated and appointed by President George W. Bush

VI. Member:

American Geophysical Union (AGU)
American Society of Limnology and Oceanography (ASLO)
Fundación La Salle de Ciencias Naturales de Venezuela (FLASA; Founding Member)

VII. Grants and Contracts:

Grants/contracts received from NSF, NASA, NOAA, EPA, ONR, USGS, MMS, The State of Florida, The Ocean Conservancy, others.

2004-2019 Funded Projects: (Not a complete list. Prior projects and funding level available on request)

NSF (2018 - 2022) OceanObs Research Coordination Network. FMK PI, J. Pearlman co-PI
NSF (2014 - 2019) The Cariaco basin oceanographic time series program. FMK PI, Co-Is: Y Astor, M. Scranton, G. Taylor, R. Thunell, and K. Fanning.
NSF (2013-2019) Belmont Forum Grant: METROPOLE: An Integrated Framework to Analyze Local Decision Making and Adaptive Capacity to Live With Large-Scale Environmental Change: Community Case Studies in Brazil, UK and the US. FMK PI, Co-I's: Mark Pelling (UK), Jose Marengo (Brazil), Sam Merrill (USA).

NSF (2012-2019) Partnerships in International Research and Education (PIRE): Context Sensitive Implementation of Synergistic Water-Energy Systems. PI. James Mihelcic (USF), FMK co-I.

NSF (1995 - 2013) The Cariaco basin oceanographic time series program. FMK PI, present Co-Is: R. Varela, Y Astor, M. Scranton, G. Taylor, R. Thunell, and K. Fanning.

NSF (2010-2012) EAR-1043323 CCEP: Coastal Areas Climate Change Education (CACCE) Partnership. PI: Jeff Ryan (USF Geology). FMK co-I.

NASA/NOAA (2019-2022) South Florida MarineBiodiversity Observation Network (MBON). FMK PI, co-I: Enrique Montes (USF), Steve Gittings (National Marine Sanctuaries Office), Maria Kavanaugh (Oregon State University).

NASA/NOAA (2014-2019) National Marine Sanctuaries as Sentinel Sites for a Demonstration MarineBiodiversity Observation Network (MBON). FMK PI, co-I: Francisco Chavez (MBARI), Enrique Montes (USF), Steve Gittings (National Marine Sanctuaries Office), Scott Doney (WHOI), Maria Kavanaugh (Oregon State University).

NASA (2018-2020) Laying the foundations of the Pole-to-Pole of the Americas Marine Biodiversity Observation Network: methodologies, capacity-building, and data sharing for biological observations across the Americas (PI: Enrique Montes)

NASA (2018-2020)(Via Oregon State University) Dynamic Seascapes to Form a Biogeographic Framework of a Global Marine Biodiversity Observing Network (PI: Maria Kavanaugh)

NASA (2017-2019)(Via North Carolina State University) From Arboreal to Benthic Communities: the ABCs of Land to Ocean Biodiversity Observations. PI: Erin Hestir.

NASA (2015-2018) Evaluating water quality and tropical vector-borne disease risk by satellite remote sensing (NESSF Fellowship to Doctoral student, Abdiel Laureano-Rosario).

NASA (Via ROFFS, Inc./PI; 2011-2015) Management and conservation of Atlantic bluefin tuna (*Thunnus thynnus*) and other highly migratory fish in the Gulf of Mexico under IPCC climate change scenarios: A study using regional climate and habitat models.

NASA (11/1/2009-10/31/2016). Decision Support System for Ecosystem-Based Management of Tropical Coral Reef Environments.

NASA (2014-2016). Florida Space Grant Consortium: Unlocking Earth's Secrets from Space; Education collaboration with Stewart Middle School, Tampa.

NASA An assessment of global organic carbon flux along continental margins. Co-I with C. Hu

NASA The mapping and monitoring of change in the Florida Keys reef tract from space using L7 and MODIS. Co-I with D. Palandro.

NASA A millennium global scale coral reef ecosystem assessment using high resolution remote sensing data. Co-I with S. Andrefouet and C. Hu

NASA Impact of large and small rivers on adjacent oceanic environments. Co-I with C. Hu

NASA EAGLE-EYE: Ecological Assessments of Generalized Littoral Environments – an Integrated EOS DB/Real-time MODIS Science Applications Project. Co-I with C. Hu

NASA: Collaborative Research with the NASA Marshall Space Flight Center.

NASA Collaborative effort with ROFFS, Inc. Study of Bluefin Tuna larvae distribution in the Gulf of Mexico. (Through 2011)

NASA Collaborative effort with Roff's, Inc. Study of ocean environmental parameters to forecast the effects of climate variability on pelagic fish.

NASA Phytoplankton hyperspectral signatures from aerial and underwater high temporal and spectral resolution measurements: GeoCape Science Program Requirements.

NASA Environmental Assessments of Coral Reef Ecosystems: Interdisciplinary Research; Co-I with S. Andrefouet (IRD, New Caledonia, France)

NOAA RESTORE (2016-2019) (via University of Miami) Evaluation of GoM oceanic observation networks, impact assessment on ecosystem management and recommendations (PI: Matthieu LeHenaff)

NOAA (2013-2016) Clean Community-Clean Coast Proposal. Marine Debris Program.

NOAA (2017-2021) Gulf of Mexico Coastal Ocean Observing System (GCOOS) Graduate Student Support

NOAA (2012 – 2021) Gulf of Mexico Coastal Ocean Observing System (GCOOS) Remote Sensing in support of GCOOS activities

NOPP	(2014-2018) National Marine Sanctuaries as Sentinel Sites for a Demonstration Marine Biodiversity Observation Network (MBON). NOAA/NASA/BOEM.
EPA	US-Mexico Binational Red Tide Program. Gulf of Mexico Program Office.
EPA	(2012-2016) Ecological Assessment of Generalized Littoral Environments Decision-Support System (EAGLE/DS). Extreme Event Impacts on Air Quality and Water Quality with a Changing Global Climate; EPA-G2011-STAR-D1.
Exxon	Gulf of Mexico Environmental Change Assessment
I-4 Corridor	Tech Support for Improving the NOAA NMFS and ICCAT Atlantic Bluefin Tuna Fisheries Management Decision Support System.
BP/FIO	Gulf Oil Spill Prevention, Response, and Recovery Grant. Early Warning 4-D Remote Sensing System to Assess Synoptic Threats to Coastal Ecosystems of Florida and of Adjacent States and Nations.
FSRI	Florida Space Research Institute; Coastal remote sensing with the Space Station; Co-I with C. Hu
NOPP	Influence of Oceanographic and Biological Processes on the Distribution of Cetaceans (D. Mann, PI; FMK co-I)
ONR	University of North Carolina; SEA-COOS remote sensing component. Co-I with C. Hu and R. Weisberg.
ONR	Construction and Deployment of an Underwater Optical Micrometer
State of FL	Geospatial Assessment of Marine Environments (GAME); Defining coastal bioregions of Florida. Co-I with J. Ogden and H. Norris.
U. Fiji	University of Fiji (2014-2019) via the Pacific-American Foundation/PACAM, US AID funding) Developing the Capacity to Generate Coastal and Shallow-Water Basemaps for Tropical Island Nations and Territories of the Pacific.
USGS	Use of remote sensing satellites to monitor sediment plumes in the Mississippi bight; Co-I with C. Hu
USGS	Use of remote sensing to monitor water clarity and sediment dynamics in the Chesapeake Bay. Co-I with C. Hu

VIII. Professional Activity: (2001-present; not exhaustive list)

University of South Florida

- Strategic Planning Committee (2017-2019)
- Research Council (2005-2007, elected vice-chair)
- Internet-2 Committee
- Search Committee: Director, School for Global Sustainability
- Search Committee: Vice President for Research
- President's Task Force: Values, Vision, Mission and Goals

College of Marine Science:

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| -Computer Committee | -Student recruiting Committee |
| -Library Committee | -Tenure and Promotion |
| -Marine Biology faculty recruitment committee | -Seminar Committee |
| -Biological Oceanography curriculum review | -Annual Faculty Review (2011, 2012) |
| -Chair, Search Committee, Biological Oceanography, College of Marine Science | |

Interamerican Institute for Global Change Research – Chair, Sci. Advisory Committee (2010-2016)

University of Massachusetts Dartmouth

- School for Marine Science and Technology: Strategic Planning Lead
- UMass Dartmouth NEASC Planning Committee

Editorial Board, Institute of Marine Affairs Journal: Caribbean Marine Science, Trinidad and Tobago

Editorial Board, Memoria, Fundacion La Salle de Ciencias Naturales, Venezuela

Ocean Studies Board, NRC

U.S. Commission on Ocean Policy

Co-Chair, Marine Biodiversity Observing Network (MBON), Group on Earth Observations

Member, Implementation Committee, Group on Earth Observations Biodiversity Observing Network (GEO BON)

Organizer: Ocean Biogeochemistry Scoping Workshop, Hawaii (September 2010)

Organizer, NASA Small Satellite Technology Initiative, NASA Remotely-Piloted Vehicle workshop.
Member, OceanObs'19 Program Committee
Member, Ocean Best Practices Working Group, Intergovernmental Oceanographic Commission
Member, GOOS Bio-Eco Panel, Intergovernmental Oceanographic Commission
Member, IGMETS, Intergovernmental Oceanographic Commission
Member, NASA PACE Science Definition Team
Member, NASA Ocean Biology and Biogeochemistry Strategic Planning Working Group
Member, NASA Biodiversity and Ecological Forecasting Strategic Planning Group
Member, SeaWiFS Science Team
Member, Landsat-7/ETM+ Science Team
Reviewer of scientific manuscripts for the AGU Global Biogeochemical Cycles.
Reviewer of scientific manuscripts for the AGU Journal of Geophysical Research.
Reviewer of scientific manuscripts for the AGU Geophysical Research Letters.
Reviewer of scientific manuscripts for the Journal of Remote Sensing of the Environment.
Reviewer of scientific manuscripts for the Journal of Continental Shelf Research.
Reviewer of scientific manuscripts for the Boletín Oceanográfico de la Universidad de Oriente.
Reviewer of scientific manuscripts for the Journal of the Institute of Marine Affairs, Trinidad & Tobago.
Reviewer of scientific manuscripts for the magazine Oceanography (Oceanography Society).
Reviewer of scientific manuscripts for the Marine Technology Society.
Reviewer of scientific proposals for NASA.
Reviewer of scientific proposals for NOAA.
Reviewer of scientific proposals for NSF (Biological Oceanography, Chemical Oceanography, OSTI).
Reviewer of scientific proposals for the Interamerican Institute for Global Change.
Reviewer of scientific proposals for the Florida Space Grant Consortium.
Reviewer of scientific proposals for the Environmental Protection Agency.
Reviewer of proposals for NASA, NSF, NOAA, EPA, ONR, NOPP, IAI

IX. Research and sea-going experience:

Extensive experience using a wide variety of remote sensing, as well as field biological, geological, chemical, and physical oceanographic equipment. Familiar with stable (nitrogen) and radioactive (carbon) isotope techniques in phytoplankton work. Participated in upwards of 40 cruises in tropical to high latitude environments.

X. Special skills:

Team leadership
Languages: Spanish, German, English
SCUBA (Advanced Open Water, Rescue training, DAN O2)
Methods for wet nutrient chemistry
Methods for autoanalyzer nutrient chemistry
Productivity assays (^{14}C and ^{15}N isotopes)
Computer systems and basic network management
Satellite and ground-based remote sensing (VIS, IR)

XI. Students and trainees while at USF:

Doctoral – Major Professor: Luis Lizcano Sandoval, Savannah Hartman, Cara Estes, Justin Saarinen, Matthew McCarthy, Abdiel Laureano-Rosario, Maria Vega-Rodríguez, Sennai Habtes, Karen Langbehn (USF English), Laura Lorenzoni, Inia Soto, Digna Rueda, Enrique Montes, David Palandro, Bisman Nababan, Fernando Gilbes, Lisa Vanderbloemen, Zhiqiang Chen. Non-USF/ Doctoral/Co-Major Professor: Joe Salisbury (University of New Hampshire), Sergio Cerdeira (Universidad de la Habana).
Masters: Megan Hepner, Kaitlyn Colna, Brendan O'Connor, Claudia Baron Aguilar, Juan Carlos Millan, Herschel T. Hochman, Josh Henson, Inia Soto, Laura Lorenzoni, Carrie Wall, Enrique

Montes, Ana Lucia Odriozola. Masters/ Co-Major Professor: MingRui Zhang, Wensheng Yao, Jingwei Ke, Haiying Zhang.
 Undergraduate: Ana Lucia Odriozola, John AKI (undergr., Eckerd College), Paola Castellanos (undergr., Universidad Simon Bolivar).
 Post-doctoral Associates: Laura Lorenzoni, Daniel Otis, Enrique Montes, Digna Rueda-Roa, Tylar Murray, Matt McCarthy, Gerardo Toro-Farmer, Zhiqiang Chen, Richard Bohrer, Gilberto Gaxiola, Eduardo Santamaría, Guillermo E. Quiros, Serge Andrefouet, Cesar Fuentes-Yaco, Chuanmin Hu, Eurico D'Sa, Christian Schiller.
 Trainees (not exhaustive): Raoni Bosquilia, Samira Bosquilia, Mahmoud Elmezayen, Mostafa Awad, Mostafa Al-Maghraby, Ezequiel Cozzolino, Paul W. Bissett, Lingzis D. Tang, Roberto Perez, Sergio Cerdeira, Nelson Melo, Jose Rafael Diaz, Paola Filippi, Denis Nadeau, David Lindo-Atichati.
 Technicians: Tylar Murray, Sebastian DiGeronimo, Catherine J. Reynolds, Qiao Qiao, Robert Chen, C. J. Reynolds, Gabriel Quiles, Brock Murch, Judd Taylor, Michelle McIntyre, Richard Bohrer, Remy Luerssen, Christine Kranenburg, Haiying Zhang, Laura Lorenzoni, Christian Schiller, Damaris Torres, Zhiqiang Chen, MingRui Zhang, Wensheng Yao.

XII. Publications: (* indicates peer-reviewed publication)

2020

- *Djurhuus, Anni, Collin J. Closek, Ryan P. Kelly, Kathleen J. Pitz, Reiko P. Michisaki, Hilary A. Starks, Kristine R. Walz, Elizabeth A. Andruszkiewicz, Emily Olesin, Katherine Hubbard, Enrique Montes, Daniel Otis, Frank E. Muller-Karger, Francisco P. Chavez, Alexandria B. Boehm & Mya Breitbart. 2020. Nature Communications. 11, 254. doi:10.1038/s41467-019-14105-1.
- *Johns, Elizabeth M., Rick Lumpkin, Nathan F. Putman, Ryan H. Smith, Frank E. Muller-Karger, Digna Rueda, Chuanmin Hu, Mengqiu Wang, Maureen T. Brooks, Lewis J. Gramer, and Francisco E. Werner. 2020. The establishment of a pelagic Sargassum population in the tropical Atlantic: biological consequences of a basin-scale long distance dispersal event. Progress in Oceanography. <https://doi.org/10.1016/j.pocean.2020.102269>.
- *SCOR Working Group 154. 2020. Recommendations for plankton measurements on the GO-SHIP program with relevance to other sea-going expeditions. SCOR Working Group 154 GO-SHIP Report. Scientific Committee on Oceanic Research, 70pp. DOI: <http://dx.doi.org/10.25607/OBP-718>
- *Scranton Mary I., Gordon T. Taylor, Robert C. Thunell, Frank E. Muller-Karger, Yrene Astor, Peter Swart, Virginia P. Edgcomb, and Maria G. Pachiadaki. 2020. Anomalous $\delta^{13}\text{C}$ in Particulate Organic Carbon POC at the chemoautotrophy maximum in the Cariaco Basin. JGR Biogeosciences. Volume 125, Issue 2. <https://doi.org/10.1029/2019JG005276>.

2019

- *Bax, Nicholas J, Patricia Miloslavich, Frank Edgar Muller-Karger, Valerie Allain, Ward Appeltans, Sonia Dawn Batten, Lisandro Benedetti-Cecchi Pier Luigi Buttigieg, Sanae Chiba, Daniel Paul Costa, J. Emmett Duffy, Daniel C. Dunn, Craig Richard Johnson, Raphael M Kudela, David Obura, Lisa-Maria Rebelo, Yunne-Jai Shin, Samantha Elisabeth Simmons and Peter Lloyd Tyack. 2019. A response to scientific and societal needs for marine biological observations. Frontiers in Marine Science. <https://doi.org/10.3389/fmars.2019.00395>
- *Bax, Nicholas J, Patricia Miloslavich, Frank Edgar Muller-Karger, Valerie Allain, Ward Appeltans, Sonia Dawn Batten, Lisandro Benedetti-Cecchi Pier Luigi Buttigieg, Sanae Chiba, Daniel Paul Costa, J. Emmett Duffy, Daniel C. Dunn, Craig Richard Johnson, Raphael M Kudela, David Obura, Lisa-Maria Rebelo, Yunne-Jai Shin, Samantha Elisabeth Simmons and Peter Lloyd Tyack. 2019. Corrigendum: A Response to Scientific and Societal Needs for Marine Biological Observations. <https://doi.org/10.3389/fmars.2019.00643>
- *Bosquilia, Raoni W.D., Christopher M.U. Neale, Sergio N. Duarte, Solon J. Longhi, Silvio F. de B. Ferraz, Frank E. Muller-Karger. Evaluation of evapotranspiration variations according to soil type using multivariate statistical analysis. Geoderma. Volume 355, 113906. <https://doi.org/10.1016/j.geoderma.2019.113906>

- *Canonico, Gabrielle; Pier Luigi Buttigieg, Enrique Montes, Carol A, Stepien, Dawn Wright, Abigail Benson, Brian Helmuth, Mark John Costello, Frank Edgar Muller-Karger, Isabel Sousa Pinto, Hanieh Saeedi, Jan A Newton, Ward Appeltans, Nina Bednaršek, Levente Bodrossy, Benjamin Dale Best, Angelika Brandt, Kelly Goodwin, Katrin Iken, Antonio Marques, Patricia Miloslavich, Martin Ostrowski, Woody Turner, Eric 'Pieter Achterberg, Tom Barry, Omar Defeo, Gregorio Bigatti, Lea-Anne Henry, Berta Ramiro Sanchez, Pablo Durán Muñoz, MARIA MAR SACAU CUADRADO, Telmo Morato, Murray Roberts, Ana Garralda Garcia-Alegre and Bramley J. Murton. 2019. Global Observational Needs and Resources for Marine Biodiversity. *Frontiers in Marine Science*. <https://doi.org/10.3389/fmars.2019.00367>
- *Duffy, J. Emmett, Lisandro Benedetti-Cecchi, Joaquin A. Trinanes, Frank Edgar Muller-Karger, Rohani Ambo-Rappe, Christoffer Boström, Alejandro H. Buschmann, Jarrett Byrnes, Robert G Coles, Joel Creed, Leanne Cullen-Unsworth, Guillermo Diaz-Pulido, Carlos M. Duarte, Graham J. Edgar, Miguel Dino Fortes, Gustavo Jorge Goni, Chuanmin Hu, Xiaoping Huang, Catriona L. Hurd, Brenda Konar, Dorte Krause-Jensen, Kira Krumhansl, Peter Ian Macreadie, Helene Marsh, Len J. McKenzie, Nova Mieszkowska, Patricia Miloslavich, Enrique Montes, Masahiro Nakaoka, Kjell Magnus Norderhaug, Lina M. Nordlund, Robert J. Orth, Anchana Prathep, Nathan Freeman Putman, Jimena Samper-Villarreal, Ester A Serrao, Fred Short, Isabel Sousa Pinto, Peter David Steinberg, Rick Stuart-Smith, Richard K.F. Unsworth, Mike van Keulen, Brigitta Ine Van Tussenbroek, Mengqiu Wang, Michelle Waycott, Lauren V. Weatherdon, Thomas Wernberg and Siti Maryam Yaakub. 2019. Toward a coordinated global observing system for seagrasses and marine macroalgae. *Frontiers in Marine Science*. <https://doi.org/10.3389/fmars.2019.00317>.
- *Fennel, Katja, Simone Alin, Leticia Barbero, Wiley Evans, Timothée Bourgeois, Sarah Cooley, John Dunne, Richard A. Feely, Jose Martin Hernandez-Ayon, Xinping Hu, Steven Lohrenz, Frank Muller-Karger, Raymond Najjar, Lisa Robbins, Elizabeth Shadwick, Samantha Siedlecki, Nadja Steiner, Adrienne Sutton, Daniela Turk, Penny Vlahos, and Zhaohui Aleck Wang. 2019. Carbon cycling in the North American coastal ocean: A synthesis, *Biogeosciences Discuss*. <https://doi.org/10.5194/bg-2018-420>.
- *Gomez, F.A., Lee, S., Hernandez, F.J. , Chiaverano, L.M., Muller-Karger, F.E. Liu Y., and Lamkin, J.T. 2019. ENSO-induced co-variability of Salinity, Plankton Biomass and Coastal Currents in the Northern Gulf of Mexico. *Sci Rep* 9, 178. doi:10.1038/s41598-018-36655-y
- *Goodwin, Kelly Dee, Frank Edgar Muller-Karger, Anni Djurhuus , Lisa Zeigler Allen, Andrew E. Allen, John P. McCrow, and Gabrielle Canonico Hyde. 2019. Chapter 32. Molecular Approaches for an Operational Marine Biodiversity Observation Network. *In: World Seas: An Environmental Evaluation, Vol. III: Ecological Issues and Environmental Impacts*. 2nd Edition. Charles Sheppard (editor).
- *Jetz, Walter, Melodie A. McGeoch, Robert Guralnick, Simon Ferrier, Jan Beck, Mark J. Costello, Miguel Fernandez, Gary N. Geller, Petr Keil, Cory Merow, Carsten Meyer, Frank E. Muller-Karger, Henrique M. Pereira, Eugenie C. Regan, Dirk S. Schmeller, Eren Turak. 2019 (in press). Essential information for mapping and monitoring of species populations for policy, management, and education. *Nature Ecology & Evolution*.
- *Laureano-Rosario, A.E., Duncan, A.P., Symonds, E.M., Savic, D.A., and Muller-Karger, F.E. 2019. Predicting culturable enterococci exceedances at Escambron Beach, San Juan, Puerto Rico using satellite remote sensing and Artificial Neural Networks. *Journal of Water and Health*. 17 (1): 137-148. <https://doi.org/10.2166/wh.2018.128>
- *Le Hénaff, Matthieu, Frank E. Muller-Karger, Vassiliki H. Kourafalou, Daniel Otis, Kimberley A. Johnson, Lucas McEachron, and HeeSook Kang. 2019. Coral Mortality Event in the Flower Garden Banks of the Gulf of Mexico in July 2016: Local Hypoxia due to Cross-Shelf Transport of Coastal Flood Waters? *Continental Shelf Research*. Volume 190, 103988. <https://doi.org/10.1016/j.csr.2019.103988>
- *Lorenzoni, Laura, et al., 2019 (in press). From land to the ocean: the interplay between allochthonous and autochthonous contribution to particles in nepheloid layers of the Cariaco Basin, Venezuela. *Journal of Geophysical Research - Biogeosciences*.
- Muller-Karger, Frank; Astor, Yrene; Varela, Ramon; Lorenzoni, Laura; Thunell, Robert; Scranton, Mary; Taylor, Gordon; Tappa, Eric; Benitez-Nelson, Claudia; Montes, Enrique; Rojas, Jaimie; Narvaez, Jesus; Rosales, Alberto; Guzman, Laurencia; Capelo, Juan; Rueda-Roa, Digna.

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